

The background is a solid blue color with a gradient. At the top, there are several thin, wavy lines in shades of blue and teal, creating a sense of movement or a horizon line. The text is centered in the middle of the slide.

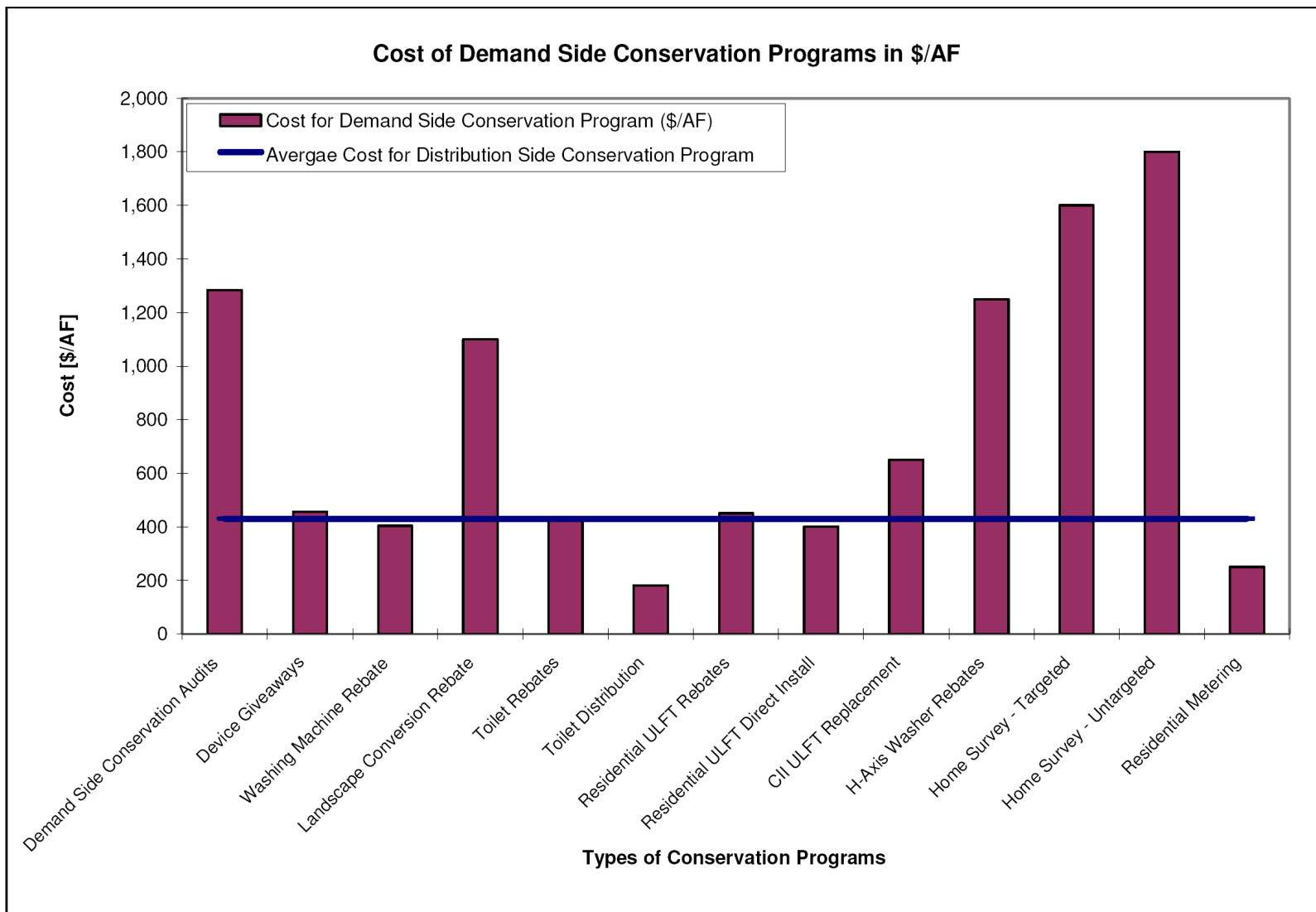
# Conservation Options Literature/Research Review



# Cost of Water Conservation Programs

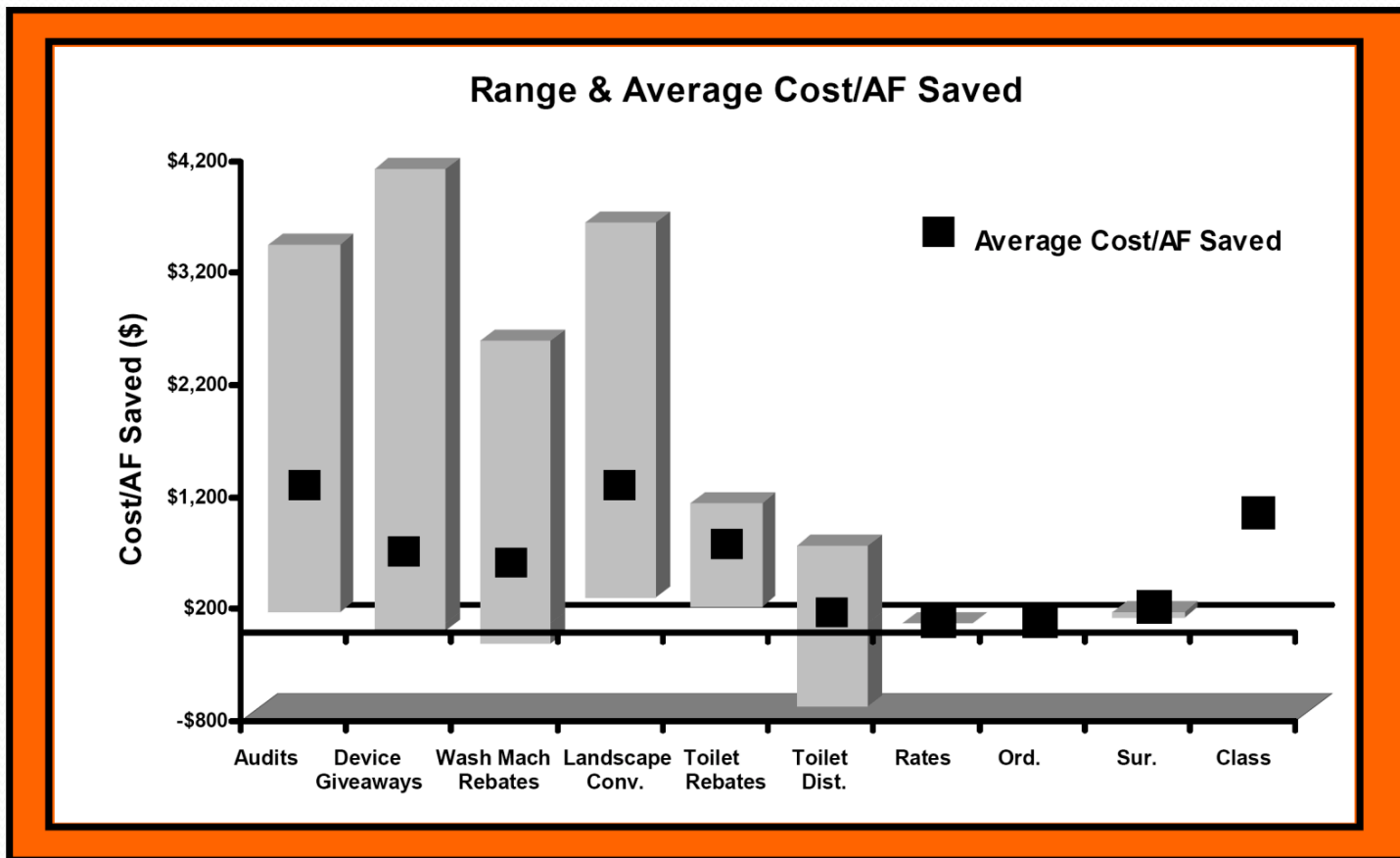
## Summary of Existing Literature/Research

- Existing literature addresses individual practices (e.g., toilet rebates, toilet distribution, washing machine rebates, etc.)
- Consistency in evaluation methods
  - Amortization over length of savings – consistency
  - NPV (Net Present Value) in cost/benefit analysis
  - Deferred capital costs/ROI
  - Evaluation criteria
- It is recognized that public education/outreach is critical, but not always factored into the cost of water conservation “programs” as it generally doesn’t result in “quantifiable” savings.



**Figure 3 Typical cost for demand side conservation programs compared to average cost for distribution side conservation programs**

Sturm and Thornton, 2007



Evaluation and Cost Benefit Analysis of  
Municipal Water Conservation Programs,  
Water CASA (2006?)

**ALL ECoBA PROGRAMS**

Total Cases Analyzed:	88
Total Programs Analyzed:	42
Participating Utilities:	30
Case Years Analyzed:	Between 1994 and 2003

# San Antonio Water System (SAWS) Texas Indoor Programs



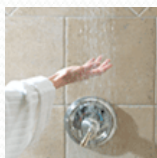
## Season to Save Community Challenge

A Community Fundraiser that Saves Water and Earns Money



## Large-Scale Retrofit Rebate Program

A money-saving rebate program for commercial, institutional and industrial water users.



## Hot Water on Demand

Warm up to a \$150 rebate and get hot water faster.



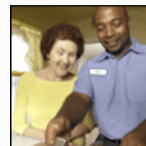
## Commercial Toilet Retrofit

Install a new high-efficiency toilet and stop flushing money down the drain.



## Wash Right

Get a \$100 rebate and *really* clean up with a new washer.



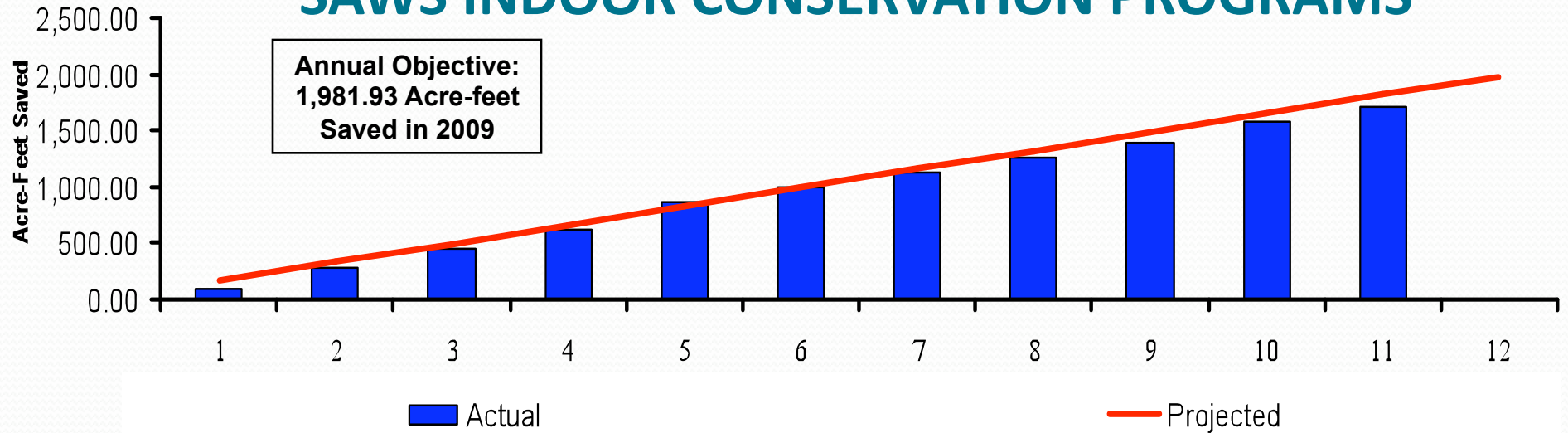
## Affordability Programs Plumbers to People



## Kick the Can

It's a great way to save money and water.

# SAWS INDOOR CONSERVATION PROGRAMS



	Projected AF Saved	Hotwater on Demand	Plumbers to People	Direct Install	Large Scale Retrofit	Wash Right	Kick the Can	Comm Toilet	Water Saver Car Wash	Showerheads & Aerators	Comm Wash Right	Monthly AF Saved		YTD % of Goal
Jan	165.16	0.27	9.55		13.34	7.83	29.54	28.56		10.61		99.70	99.70	60.37%
Feb	330.32	0.19	9.74		41.39	6.69	34.49	62.44	7.25	23.2	0.53	185.92	285.62	86.47%
Mar	495.48	0.19	9.92		24.32	7.07	32.45	47.02	20.71	17.47	2.63	161.78	447.40	90.30%
Apr	660.64	0.15	9.55		15.36	9.18	32.11	33.16	4.66	62.27	0.13	166.57	613.97	92.94%
May	825.80	0.11	7.75		118.31	7.21	30.31	37.82	3.62	52.9	0.26	258.29	872.26	105.63%
Jun	990.96	0.08	9.74		4.47	11.53	32.30	30.95	6.73	20.98	1.84	118.62	990.88	99.99%
Jul	1156.12	0.15	7.57		0	11.73	31.07	55.75	9.84	20.71	0.92	137.74	1128.62	97.62%
Aug	1321.28	0.15	9.19		9.2	11.41	31.65	38.54	7.25	14.32	4.47	126.18	1254.80	94.97%
Sep	1486.44	0.19	7.75	8.08	14.21	9.79	32.42	46.25	0	17.18	0.92	136.79	1391.59	93.62%
Oct	1651.60	0.08	6.49	10.17	48.88	8.27	32.49	53.83	0	20	0	180.21	1571.80	95.17%
Nov	1816.76	0.15	5.95	2.45	2.79	9.56	32.03	64.65	0	24.02	1.18	142.78	1714.58	94.38%
Dec	1981.92													0.00%
		1.71	93.2	20.7	292.27	100.27	350.9	498.97	60.06	283.66	12.88	1714.58		

Department: Conservation

Owner: B. Leister



## Compilation of Members' Five Year Conservation Plans



**Annual Update  
January 31, 2008**



Hillsborough County  
Pasco County  
Pinellas County  
City of New Port Richey  
City of St. Petersburg  
City of Tampa



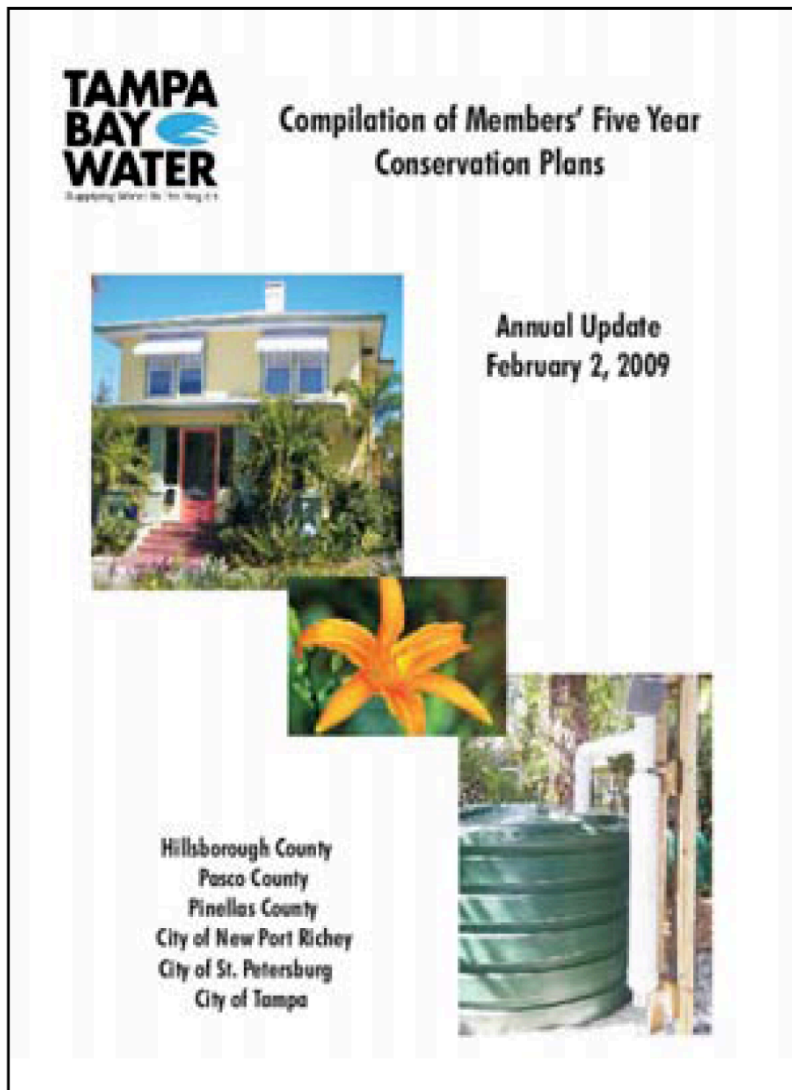
## Optimizing Long Term Demand Management Goals through Implementation, Evaluation, and Performance

Green Cities Florida  
May 21, 2009

Dave Bracciano  
Tampa Bay Water



## Members have embraced conservation



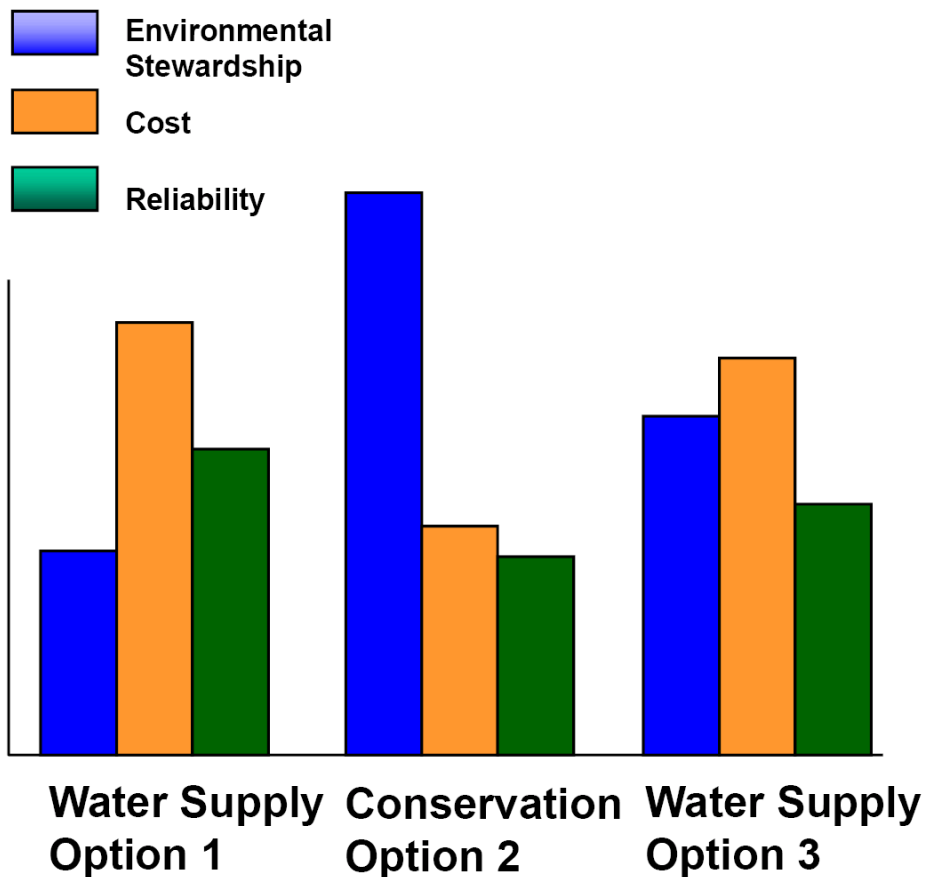
- **Wide range of options have been implemented**
- **Estimated 23 mgd of potable demand offset between 1996-2008**
- **Savings to-date establish baseline**

**Additional opportunities to improve efficiency exist**



- **Future supply needs can be met through new supply projects and/or conserved water**
- **Conserved water has economic benefits**
  - 1 mgd saved = \$10m capital cost deferment
  - 1 yr. deferral of \$100m capital project saves \$5m in interest
- **Avoided cost for energy and chemicals**

## Evaluation Criteria



- **Selected conservation projects must be:**
  - Proven technology
  - Measurable (cost, reliability, reach, etc.)
  - Capable of deferring capital expenditure (reliable)

# Water conservation projects will be compared using the same criteria, including cost

Project	\$/1000 gallons
Water Conservation	\$0.25 - \$3.25
Small Footprint Reverse Osmosis – Pinellas County	\$7.91 - \$8.20
Tampa Bay Seawater Desalination Expansion	\$5.66 - \$6.99
Gulf Coast Desalination	\$7.61
Additional Potable Groundwater from Existing Wells	\$1.24
Thonotosassa Wells	\$2.25
Alafia Expansion	\$3.97 - \$10.26
Aquifer Recharge	\$4.39 - \$7.06

# Broward Projects

<b>Project</b>	<b>Cost/\$1,000 gallons</b>
<b>C-51 Reservoir Project</b>	<b>\$2,700 + treatment</b>
<b>Floridan expansion</b>	<b>\$7,000</b>
<b>Reuse systems</b>	<b>\$10,000-\$12,000</b>
<b>Floridan-expansion of Hollywood</b>	<b>\$3,000</b>
<b>Biscayne Aquifer Recharge</b>	<b>\$15,000</b>
<b>NatureScape Irrigation Service (2009)</b>	<b>\$1.41</b>
<b>Condensate Recovery System*</b>	<b>\$0.38-\$1.79</b>
<b>Plantation HET Program</b>	<b>\$9.78-\$10.91</b>
<b>Water SIP Projects (2003-2010)</b>	<b>\$5.15</b>
<b>Pompano Showerhead, Aerators</b>	<b>\$0.53</b>
<b>Lighthouse Point Irrigation Systems</b>	<b>\$6.80</b>
<b>Broward County WWS HET</b>	<b>\$19.74</b>

\* Per Bassett, amortized 20 years



# Conservation Program Costs

<b>Project</b>	<b>\$Cost/1000 gallons</b>
<b>SAWS conservation program (2009)</b>	<b>\$9.59</b>
<b>Tampa Bay indoor conservation program (2007)</b>	<b>\$15.95</b>
<b>Tampa Bay outdoor conservation program (2007)</b>	<b>\$25.54</b>
<b>Tamarac Conservation (2006-2009)</b>	<b>\$1.37</b>
<b>Public Outreach Program – Cary, NC (2001)</b>	<b>\$0.49</b>



Questions?